

## Technical Contacts

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## Economic / Market Analysis and Modeling

**A**ny social system, subsystem, assembly, subassembly, or part must operate within the boundaries or constraints of scarce resources and the issues of insatiable wants. Economic Analysis is specifically concerned with the related issues of supplies and demands and the interrelated issues of production, consumption, and distribution of goods and services. The science of economics provides methods, tools, and analysis to optimize the benefit through the necessary tradeoffs between supplies and demands, scarcity and wants.

Originally organized to determine the economic viability of DOE funded projects in alternative energy and industrial technologies during the 1980's, the Economic Analysis Group offers its service to any federal, classified, or national security project where economic viability is determined by issues of investment, operation, and risk management. Economic analysis was combined with the INL's systems engineering capability due the similar methods in mission analysis, functional decomposition, requirements identification, tradeoff and optimization analysis, system synthesis and integration, configuration management, and solution implementation. A partial list of past customers and projects suggest that no problem is too small or too large for analysis, just as long as there is a question of economic viability:

- ▶ Comparative economics of conventional and alternative energy systems
  - Oil, coal, natural gas, nuclear, and large-scale hydro
  - Hydro, biomass, wind, geothermal, geo-pressured, photovoltaic energy
  - Synthesis gas, bio-fuels, batteries and fuel cells
- ▶ Comparative economics of transportation systems
  - Auto, truck, air, water heavy-rail transport
  - Light and ultra-light rail, air and water transport
- ▶ Synthesis of environmental, economic, and risk evaluations related to national security
  - Urban economic issues in siting National Low-Level Waste facilities
  - Waste mitigation economics at Rocky Flats, Hanford, Yucca Mt, and INL
  - Enterprise economics related to the Nuclear Weapons Surety Program
  - Abrams heavy armor production at SMC
  - Risk management of PCB assets at defense department facilities
  - Primary and emergency backup power generation at defense department facilities
- ▶ Value-added analysis of pulp and paper, steel, foundry, glass, and aluminum industries
  - Energy, material, and labor efficiency issues
- ▶ Cost consultant on facility investment, operations, and decommissioning
  - INL and Atomic Energy Canada, Limited

The Economic Analysis group employs accepted economic methods in:

- ▶ Present value analysis, cost benefit analysis, tests of investment efficiency
- ▶ Life cycle analysis, tests in economic effectiveness
- ▶ Contingency analysis and other non-market analysis techniques.

